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Facilitating the sharing and coordinated use of spatially referenced data in Delaware

## **Ortho/Elevation/LULC Data Project Update**

### **As presented to the Delaware Clean Water Advisory Council**

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### **Overview**

Aerial photography, elevation data, impervious surface data, and land use/land cover data were collected in a 2007 project funded jointly by the state, the counties, the city of Dover and the federal government. This partnership contracted, through the Office of Management and Budget, with Sanborn Map Company to complete the project for just over \$643,000. Airborne data collection took place in March and April of 2007 and data has been in production, review and publication since early 2008. Data were collected using digital cameras and a Light Detection and Ranging (LiDAR) sensor.

### **Orthophotography (Complete)**

The 2007 statewide aerial photography is published at a map scale of 1:2400 with (mostly) ¼-meter pixel resolution. Selected areas have been down-sampled to 1-meter pixel resolution for security reasons. The data are maintained at the Office of Management and Budget as 2010 individual tiles of 4-band GeoTIFF data (348 gigabytes total). These can be viewed as color, black and white, or infrared data. They are also available as sub-state mosaics compressed using both MrSID and JPEG2000 software (both less than 30 gigabytes storage).

The data are served as an ArcIMS image service on the Delaware DataMIL at [datamil.delaware.gov](http://datamil.delaware.gov). There are plans to make them available for download in JPEG format from DataMIL. They have been submitted to the USGS EROS data center for future download availability ([edc.usgs.gov](http://edc.usgs.gov)). There may also be other download sites identified and enabled in future.

### **Land Use/Land Cover (Complete)**

A 2007 update of the 2002 Land Use/Land Cover data set is complete and available as a ZIPPED statewide shapefile data set at [stateplanning.delaware.gov/info/lulcdata/2007\\_lulc.shtml](http://stateplanning.delaware.gov/info/lulcdata/2007_lulc.shtml) and as an ArcIMS feature service on the Delaware DataMIL. This update includes a wetlands/wooded areas enhancement designed by state forestry and natural resources managers. A simplified cartographic symbology for this data set was developed by land use planning and environmental resources managers under the leadership of Delaware Geological Survey staff and is published on the 2007\_LULC web page.

### **Impervious Surface Data (Complete)**

As a by-product of the Land Use/Land Cover data set, Sanborn produced an impervious surface data set based on automated analysis of the 2007 orthophotography. This data set is not intended to be completely accurate or to be used as the sole basis for regulatory activities. It is in a GRID format, in which the state is divided into 1-meter square grid cells. For each, an automated system determined whether, based on the spectral signature of the photography, the square was more likely pervious or impervious. This was created to guide land use/land cover interpreters to areas that have been developed since the 2002 project. The data is available in four separate GRID data files, one each for Kent and New Castle Counties and two for Sussex County (east and west) at

[stateplanning.delaware.gov/info/impervious/2007\\_impervious.shtml](http://stateplanning.delaware.gov/info/impervious/2007_impervious.shtml).

### **Elevation Data (Partly Complete)**

The 2007 project collected elevation data for Kent and New Castle Counties only. Elevation data for Sussex County was collected in 2005 by a partnership of several federal agencies including NOAA and USGS. This project produced LiDAR point data, a digital elevation model, and 2-foot interval contours for Sussex County. Access to the 2005 Sussex County elevation data is through the Delaware Geological Survey (contact Sandy Schenck, at 302-381-8262). The 2007 project was designed to create data products that will match the 2005 data products for Sussex County.

“Raw” LiDAR point data for Kent and New Castle Counties is now available in shapefile format for those with the GIS tools, and network storage, to use it. It takes about 350 gigabytes. Copies have been given to DNREC and the USGS Dover field office and have been submitted to the USGS for planned future distribution via the USGS Center for LIDAR Information Coordination and Knowledge (CLICK) at [lidar.cr.usgs.gov](http://lidar.cr.usgs.gov). Others should contact Mike Mahaffie, at 302-739-3090.

Sanborn is working now on the final part of its contract to complete a digital elevation model (DEM) and 2-foot interval contour data set for Kent and New Castle Counties. The part of the project is expected to be complete by late August. These data products will be integrated with the DEM and contour data for Sussex County and served jointly via the DataMIL when complete. There will also be provision made for download of at least the contour data set and perhaps the DEM (this may depend on the size of the data files). Information on these data sets will be included on the Delaware Spatial Data Framework web site when available:

[stateplanning.delaware.gov/information/gis\\_data.shtml](http://stateplanning.delaware.gov/information/gis_data.shtml).

### **Supplemental Information**

Both the orthophotography and the LiDAR point data are organized into a statewide tile system of 2010 tiles, each 1-kilometer square. An index map of that tile system is posted in PDF format at [stateplanning.delaware.gov/coord/dgdc/ortho\\_index.pdf](http://stateplanning.delaware.gov/coord/dgdc/ortho_index.pdf) and can be downloaded in shapefile format at

[stateplanning.delaware.gov/coord/dgdc/ortho\\_tile.zip](http://stateplanning.delaware.gov/coord/dgdc/ortho_tile.zip).